Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the present application:

Listing of Claims

1.- 5. **(canceled)**

6.-15. **(canceled)**

16. (previously amended) A method of operating a receiver to receive an RF signal, the receiver comprises an LNA with continuously variable gain that receives the RF signal and produces an LNA output signal coupled to a VGA, the LNA and VGA have control inputs to receive control signals that set gain factors of the LNA and VGA, respectively, the method comprising steps of:

determining that a received power level of the RF signal is varying within a first selected power range;

maintaining the gain factor of the VGA; and

adjusting the gain factor of the LNA so that a signal-to-noise ratio required for demodulation of the RF signal is met with a selected margin and linearity requirements of the receiver are reduced.

17. (original) The method of claim 16, further comprising steps of:

determining that the received power level of the RF signal is varying within a second selected power range;

maintaining the gain factor of the LNA; and

adjusting the gain factor of the VGA so that the signal-to-noise ratio required for demodulation of the RF signal is met.

18. **(canceled)**

19. (currently amended) ~~The method of claim 18, further comprising steps of:~~ **A method of operating a receiver to receive an RF signal, the receiver comprises an LNA with continuously variable gain that receives the RF signal and produces an LNA output signal coupled to a VGA, the LNA and VGA have control inputs to receive control signals that set gain factors of the LNA and VGA, respectively, the method comprising steps of:**

determining that a received power level of the RF signal is varying within a first selected power range;

adjusting the gain factor of the VGA;

adjusting the gain factor of the LNA so that a signal-to-noise ratio required for demodulation of the RF signal is met with a selected margin and linearity requirements of the receiver are reduced;

determining that the received power level of the RF signal is varying within a second selected power range;

maintaining the gain factor of the LNA; and

adjusting the gain factor of the VGA so that the signal-to-noise ratio required for demodulation of the RF signal is met.

20. **(canceled)**

21. (currently amended) ~~The control network of claim 20, further comprising~~: **A radio receiver comprising:**

a continuously variable gain low noise amplifier (LNA) coupled to a subsequent variable gain amplifier (VGA);

a demodulator to generate an automatic gain control signal indicating a power level of a desired received signal; and

a control network coupled to receive the gain control signal to optimally set the gain of the LNA and VGA in a way that minimizes LNA gain while maintaining the required signal quality for proper demodulation, wherein the control network further comprises:

an input for receiving a received signal strength indicator (RSSI);

an input for receiving a quality indicator of the demodulated signal; and

logic to perform a mapping function wherein the gain of the LNA and VGA are controlled optimally.

22. (original) The control network of claim 21, wherein the logic to perform the mapping function operates to lower the gain of the LNA once the desired received signal power exceeds a level where interfering signals are possible until a gain range of the LNA is exhausted, at which point only the gain of the VGA is controlled.

23. (original) The control network of claim 21, wherein the logic to perform the mapping function operates to lower the gain of the LNA and VGA together as the power of the received signal increases above a sensitivity threshold until the gain range of the LNA is exhausted, at which point only the gain of the VGA is controlled.

24. (original) The control network of claim 21, wherein the quality indicator is one or more of a bit energy per noise spectral density (E_b/N_o), a bit error rate (BER), and a frame erasure rate (FER).